

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference SAI013BWO	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/IT 03/00593	International filing date (day/month/year) 01/10/2003	(Earliest) Priority Date (day/month/year) 02/10/2002
Applicant S.A.I. SOCIETA' APPARECCHIATURE IDRAULICHE SPA		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 8 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☒ **Certain claims were found unsearchable** (See Box I).

3. ☒ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

HYDRAULIC MACHINE WITH RADIAL CYLINDERS

5. With regard to the **abstract**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

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☐ None of the figures.

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Box III TEXT OF THE ABSTRACT (Continuation of Item 5 of the first sheet)

The hydraulic machine with radial cylinders (3, 4, 5, 6 and 7) comprises pistons (8) with radial stroke, arranged in contact with an outer cam (13) and coplanar with said group of cylinders, each equipped with a roller on the path (12) of said cam, and it has, in each piston (8), a rolling bearing (9, 10, 11);

moreover, the roller (10) and rolling bearing (9,10,11) are small to allow, in the alternating motion of the piston (8), introduction steps of said roller in the respective liner of the cylinder (3, 4, 5, 6 and 7). In each piston (21), an anti-friction ferrule, (23) is placed in contact with the pin (22) or with an interpositioned and coupled support element (25) for said roller (20); said ferrule being coupled with the inner diameter of the roller (20) itself. Finally, static and dynamic O-rings each consisting of a metal ring (28, 31) are mounted with interference in the coupling on the sealing diameter (D) and housed in a throat (29, 36) with slight axial clearance.

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Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: 3
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1,2,4-7

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 3

The wording "full filling type" in present claim 3 is unclear. Hence, claim 3 lacks clarity within the meaning of Article 6 PCT to such an extent as to render a meaningful search of this claim impossible.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1,2,4-7

Hydraulic machine with radial cylinders with rollers mounted on a rolling bearing.

2. claims: 8-14

Hydraulic machine with radial cylinders with rollers mounted on a sliding bearing.

3. claims: 15-19

Hydraulic machine with radial cylinders with O-rings consisting of a metal ring.

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International Application No
PCT/IT 03/00593A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 F03C1/24

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 F03C F04B F01B F16C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CH 244 148 A (BLANC EUGENE) 31 August 1946 (1946-08-31)	1,2,7
Y	page 1, line 24 - page 2, line 15; claim 3; figures 1,2	4-6
X	----- US 3 357 312 A (JAKOVLEVICH ROGOV ANATOLY ET AL) 12 December 1967 (1967-12-12) column 7, line 51 - column 7, line 61; figures 1,5	1,7
X	----- GB 441 760 A (CHARLES HYLAND) 24 January 1936 (1936-01-24) page 1, line 67 - page 1, line 85; figure 1	1,7
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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"G" document member of the same patent family

Date of the actual completion of the international search

23 March 2004

Date of mailing of the international search report

25. 05. 2004

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Authorized officer

Descoubes, P

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International Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 3 994 544 A (FLATLAND LLOYD P) 30 November 1976 (1976-11-30) column 2, line 12 - column 2, line 34; figure 1	4,5
Y	----- US 3 477 884 A (SCHLICHT HANS GEORG) 11 November 1969 (1969-11-11) abstract column 2, line 21 - column 2, line 34 -----	6

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Information on patent family members

International Publication No

PCT/IT 03/00593

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
CH 244148	A	31-08-1946	NONE	
US 3357312	A	12-12-1967	NONE	
GB 441760	A	24-01-1936	NONE	
US 3994544	A	30-11-1976	BR 7504530 A CA 1033794 A1 DE 2525532 A1 FR 2281517 A1 GB 1497454 A JP 51019252 A	03-08-1976 27-06-1978 26-02-1976 05-03-1976 12-01-1978 16-02-1976
US 3477884	A	11-11-1969	DE 1292696 B CH 472500 A GB 1055085 A SE 309790 B	17-04-1969 15-05-1969 11-01-1967 08-04-1969